Attorney Docket Number: FSP0054
Client Reference Number: AWS 761.US
Title: INTELLIGENT PRESENTATION NETWORK MANAGEMENT SYSTEM
Application Number: 09/511,168

APPEAL BRIEF

for

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Client Reference Number: AWS 761.US
Title: INTELLIGENT PRESENTATION NETWORK MANAGEMENT SYSTEM
Application Number: 09/511,168
Filing Date: Thursday, February 24, 2000
First Named Inventor: Wei, Xinguo
Group Art Unit: 2666
Examiner Name: Hom, Shick

Appeal is taken from the Examiner's most recent office action mailed on November 1, 2005.

This appeal brief complies with the revised format specified in MPEP 1205 [R-3].

REAL PARTY IN INTEREST

The real party in interest is

Cingular Wireless II LLC
5565 Glenridge Connector
Suite 1700
Atlanta, GA, USA

the assignee and/or owner of all rights and interest in the subject matter of this appeal.

RELATED APPEALS AND INTERFERENCES

None.

STATUS OF CLAIMS

Claims 1-21 are presently pending.

Claims 1-10 and 15-19 stand rejected as anticipated under 35 U.S.C. 102(e) by Richardson, U.S. Patent No. 6,271,845.

Claims 14 and 20 stand rejected under 35 U.S.C. 103(a) as unpatentable over Richardson in view of Cutrer, U.S. Patent No. 5,668,562.

Claims 11-13 and 21 would be allowed if rewritten to include the limitations of the base claim and any intervening claims.

Claims 1-10 and 14-20 are the subject of this appeal.

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STATUS OF AMENDMENTS

No amendments were filed after final rejection.

SUMMARY OF CLAIMED SUBJECT MATTER

The invention relates to communication network management. One aspect of the invention involves establishing a hierarchy of geographical areas in the communication network. See FIG. 2 and Page 9, lines 4-15. Higher levels of the hierarchy include a plurality of areas from lower levels of the hierarchy. Again see FIG. 2 and Page 9, lines 4-15. Network elements from lower levels of the geographic hierarchy are summarily represented at higher levels. See Page 8, line 20 to page 9, line 3. When the failure of network elements at a lower level is detected, an alarm is sent to a higher level summarizing the failure. In response to the alarm, failed network elements at a particular lower level of the geographical hierarchy are identified and located. See page 11, line 20 to Page 12, line 2.

GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

1. Claims 1-10 and 15-19 stand rejected as anticipated under 35 U.S.C. 102(e) by Richardson, U.S. Patent No. 6,271,845?

2. Claims 14 and 20 stand rejected under 35 U.S.C. 103(a) as unpatentable over Richardson in view of Cutrer, U.S. Patent No. 5,668,562?

ARGUMENTS

Please consider the following arguments in favor of withdrawing the claim rejections.

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Rejection of claims 1-14 under 35 U.S.C. 102(e) as anticipated by Richardson (6,271,845)

Claims 1-14 recite aspects including establishing a hierarchy of geographical areas in the communication network, where an area at a higher level of the hierarchy includes a plurality of areas at a lower level of the hierarchy; representing each network element in a geographical area at a first level in the geographical hierarchy; and summarizing the representation of network elements at a second level in the geographical hierarchy, higher than the first level of the geographical hierarchy.

Richardson teaches none of these aspects. Richardson teaches a map having icons representing networks, and/or groups of network icons. There is no hierarchy of geographic areas. The "maps" referred to in Richardson are in fact group view containers, e.g. data structures representing collections of network objects and/or object attributes. The "sub-maps" are nothing more than group views of network objects. See Col. 10, lines 44-46. These "maps" and "sub-maps" do not form a geographic hierarchy. As the Office is no doubt aware, the term "map" may refer to relationships among objects, other than geographical relationships, for example node-graph trees. Such is the case here. The "maps" refer to grouping of network objects and/or attributes, not to geographical maps.

Richardson fails to teach representing each network element in a geographical area at a first level in the geographical hierarchy, because, among other reasons, there is no geographical hierarchy in Richardson. Likewise, Richardson fails to teach summarizing the representation of

network elements at a second level in the geographical hierarchy, higher than the first level of the geographical hierarchy, for at least the reason that there is no geographical hierarchy in Richardson.

The Office Action appealed from cites Richardson, col. 2, lines 15-39 as teaching determining a network status and following the path of a failed print job to determine the point at which it failed. However, there is no teaching or suggestion that the "path" followed involves multiple levels of a geographical hierarchy. This part of Richardson teaches that network devices are automatically added to a topological database. However, a "topology", even in the geographical sense, is well known and commonly understood to mean a graphic representation of the surface features of a place or region on a map, indicating their relative positions and elevations. It does not mean or even inherently imply a hierarchy of geographical regions. Also, there are many meanings to the term "topology", especially in data and computer science, that do not involve geography at all. For instance, a network "topology" refers to the relative interconnection of network devices, for example in a node graph, and may not involve geographical information at all. This latter meaning is, in the applicant's opinion, the most likely and applicable to apply in the context of Richardson. Certainly there is nothing to suggest that the "topology" referred to in Richardson, col. 2, involves a geographical hierarchy.

The Office Action cites Richardson, col. 3, lines 6-20 as teaching that network printers are each graphically represented by an icon on the network which can then be "browsed" to determine a problem. There is no teaching or suggestion that such "browsing" of the printer icon involves navigation through multiple levels of a geographic hierarchy. The only hierarchy of any kind referred to in Richardson involves group containers which logically relate devices having some

common characteristic or attribute, such as all Netware-type servers or all NT-type servers. Richardson uses the term "browsing" a network device to mean selecting the icon or container to find out details about the device and the problem it is having. In context, the term "browsing" an icon clearly has nothing to do with navigating a geographical hierarchy.

The Office Action cites Richardson, col. 4, lines 19-46 as teaching the grouping of network devices graphically and displaying the network devices as shown in Figure 4, i.e. on top of the map of the U.S.A. where double-clicking on the NW-Servers icon for example will explode to show all the servers in the topology database.

Richardson teaches only one geographic level, the high level map of the U.S.A. The icons displayed on this map represent collections of network devices having some common attribute. No hierarchy of geographic areas is taught or even suggested – the geographic map is flat, a single level. The other "maps" referred to by this part of Richardson are in fact group view containers, e.g. collections of network objects and/or object attributes. Figure 4 clearly shows that the exploded "map" is nothing more than a list of devices having common attributes, such as all Netware servers, HP printers, and so on.

Rejection of claims 15-17 under 35 U.S.C. 102(e) as anticipated by Richardson (6,271,845)

Claims 15-17 recite aspects including representing the communications network as a hierarchy of geographical areas, where an area at a higher level of the hierarchy of geographical areas includes a plurality of areas at a lower level of the hierarchy of geographical areas; detecting a

failure of one or more network elements; sending an alarm to the higher level in the geographical hierarchy summarizing the failure of the one or more network elements; and in response to the alarm, identifying and locating failed network elements at a lower level of the geographical hierarchy. Again, Richardson fails to anticipate these aspects for at least the reason that Richardson fails to teach a geographical hierarchy.

Rejection of claim 18 under 35 U.S.C. 102(e) as anticipated by Richardson (6,271,845)

Claim 18 recites aspects including, in response to an alarm, narrowing the scale of a map to geographically locate failed network elements. Nowhere does Richardson teach nor even suggest narrowing the scale of a map to geographically locate failed network elements.

Rejection of claims 1-14 under 35 U.S.C. 102(e) as anticipated by Richardson (6,271,845)

Claims 19-20 recite an application coupled to a database to represent the communications network using a hierarchical arrangement of geographic areas, where each network element is located at a lower level in the hierarchy of geographical areas, the application summarizing the representation of a plurality of network elements at a higher level in the hierarchy of geographical areas. Richardson fails to anticipate these aspects for at least the reason that Richardson fails to teach a geographical hierarchy.

Rejection of claims 14 and 20 under 35 U.S.C. 103(a) as unpatentable over Richardson in view of Cutrer (5,668,562)

Richardson fails to teach a geographical hierarchy. Therefore, for at least the reasons cited previously, the combination of Richardson and Cutrer fails to teach the elements of claims 14-20 and therefore fails to render such claims as obvious.

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CLAIMS APPENDIX

1. A method of managing network elements in a communications network comprising:

establishing a hierarchy of geographical areas in the communication network, where an area at a higher level of the hierarchy includes a plurality of areas at a lower level of the hierarchy;

representing each network element in a geographical area at a first level in the geographical hierarchy; and

summarizing the representation of network elements at a second level in the geographical hierarchy, higher than the first level of the geographical hierarchy.

2. The method of claim 1 in which the establishment of the hierarchy of geographical areas includes establishing *n* levels of geographical areas in the network, where each nth level geographical area includes a plurality of *(n-1*)th level geographical areas, and in which summarizing the representation of network elements includes summarizing the representation of network elements at *(n-1*) levels of geographical areas.

3. The method of claim 1 wherein the management of the communication network includes monitoring a condition of the network elements, in which the representation of network elements in the geographical area includes representing the condition of

the network elements, and in which summarizing the representation of network elements at the second level in the geographical hierarchy includes triggering an alarm at the second level in response to a condition of a particular network element represented at the first level.

4. The method of claim 3 wherein the communication network is managed in real-time, and further comprising, following the representing of each network element in the geographical area:

updating the condition of one or more network elements represented in the first level of the geographical hierarchy; and

wherein summarizing the representation of network elements at the higher level in the geographical hierarchy includes triggering the alarm at the second hierarchical level in response to changes in the condition of network elements.

5. The method of claim 1 in which representing each network element in a geographical area at a first level in the

geographical hierarchy includes representing at least one network element as a first icon on a map of geographical areas on the first level of the geographical hierarchy.

6. The method of claim 1 in which representing each network element in a geographical area at a first level in the

geographical hierarchy includes representing a condition of at least one network element with a first icon that varies with respect to the status of the network element.

7. The method of claim 1 in which

summarizing the representation of network elements at the second level in the geographical hierarchy includes representing a status of a plurality of the network elements as an icon on a map of geographical areas on the second level of the geographical hierarchy.

8. The method of claim 7 further comprising, preceding the

summarizing the representation of network elements at the higher level in the geographical hierarchy:

establishing a set of rules defining the meaning of the icon.

9. The method of claim 7 in which summarizing the representation of network elements at the second level in the geographical hierarchy includes coloration of the icon.

10. The method of claim 1 in which summarizing the representation of network elements at the level in the geographical hierarchy includes summarizing a status of a plurality of the network elements with textual annotation.

11. The method of claim 1 wherein management of the

network includes installation of network elements into the communications network, and in which representing each network element in a geographical area at a first level in the geographical

hierarchy includes entering a latitude and a longitude of the network element upon installation into the network.

12. The method of claim 8 wherein network management is supervised, and further comprising:

creating supervisor identities; and

in which the establishment of rule-sets includes establishing a set of rules for each supervisor identity.

13. The method of claim 8 in which the establishment of rule-sets includes defining a set of rules responsive to conditions selected from a group consisting of power source status, software corruption, hardware failure, environmental factors, and intrusion into the network elements.

14. The method of claim 1 wherein the communications network is a fixed wireless service (FWS) including base stations and remote units, and in which representing each network element in a geographical area at a first level in the geographical hierarchy includes representing geographical positions of network base stations and remote units.

15. A method of determining the failure of a network element in a communications network comprising:

representing the communications network as a hierarchy of geographical areas, where an area at a

higher level of the hierarchy of geographical areas includes a plurality of areas at a lower level of the hierarchy of geographical areas;

detecting a failure of one or more network elements;

sending an alarm to the higher level in the geographical hierarchy summarizing the failure of the one or more network elements; and

in response to the alarm, identifying and locating failed network elements at a lower level of the geographical hierarchy.

16. The method of claim 15 in which representing the communications network as a hierarchy of geographical areas includes representing the communications network as a hierarchical arrangement of geographical maps where a map at the higher level of the hierarchy of geographical areas includes a plurality of maps from the lower level of the hierarchy of geographical areas.

17. The method of claim 15 in which the sending of the

alarm to the higher level in the geographical hierarchy summarizing network element failures includes defining an alarm trigger that is responsive to the network element failures.

18. A method for determining the failure of a network element in a communications network comprising:

monitoring a geographical map which summarizes the status of a plurality of network elements in the communications network;

on a map display, receiving an alarm representing the failure of network elements; and

in response to the alarm, narrowing the scale of the map to geographically locate failed network elements.

19. A system for presenting a communications network

comprising:

a database including geographical locations of network elements;

an application coupled to said database to represent the communications network using a hierarchical arrangement of geographic areas, where each network element is located at a lower level in the hierarchy of geographical areas, said application summarizing the representation of the plurality of network elements at a higher level in the hierarchy of geographical areas;

a display having an input connected to said application to present a modifiable display of network elements as represented in multiple levels in the hierarchy of geographical areas; and

a supervisor interface connected to said application, said supervisor interface providing commands to said application to modify said display.

20. The system of claim 19 wherein the communications network is a

fixed wireless system (FWS); and

in which the network elements are base stations and remote units.

21. The system of claim 20 in which said base stations and remote

units have an operational and a non-operational status;

in which said database is updated on the status of each said base station and remote unit;

in which said application summarizes the status of said base stations and remote units at the higher hierarchical level; and

in which said display presents said application summaries.

EVIDENCE APPENDIX

None

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RELATED PROCEEDINGS APPENDIX

None

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